



ecology and environment, inc.

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International Specialists in the Environmental Sciences

DATE: June 21, 1983
TO: File/USEPA Region V
FROM: C.E. Mays III/ Environmental Scientist *Review*
SUBJECT: Preliminary Assessment
Illinois/ TDD #R05-8212-01A, PAG #148
Robinson/ Marathon Oil Co. - Robinson Refinery
ILD005476882

Attached is EPA's Preliminary Assessment Form 2070-12 for the above referenced site.

Primary information was gathered from the following source(s):

1. USEPA ERRIS file, Region v, Chicago, Illinois
2. IEPA Files, Collinsville, Illinois
- 3.

Information indicates the following responsible parties should be listed. They are listed here because of space limitations:

1. Marathon Oil
- 2.
- 3.

Presently, data gaps or no verification exists in the following key area(s):

1. Waste Characteristics (actual analysis)
2. Hydrogeological information
- 3.

A review of the available data indicates that additional information will be necessary to assess the impact(s) on:

1. Groundwater and surface water contamination
2. Soil contamination
3. Drinking water contamination
- 4.
- 5.

EPA Region 5 Records Ctr.



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Suggested methods/sources for obtaining additional information are:

1. Hydrogeological study
- 2.
- 3.

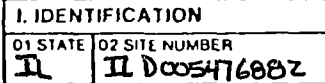
Notice of an apparent need for emergency action was transmitted to _____ on _____

by _____

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DM

| <div style="display: inline-block; text-align: center;"> POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT PART 1 - SITE INFORMATION AND ASSESSMENT </div> | | I. IDENTIFICATION <div style="display: flex; justify-content: space-between;"> <div>01 STATE IL</div> <div>02 SITE NUMBER IL D 005476882</div> </div> | |
|---|-----------------------|---|--|
| II. SITE NAME AND LOCATION | | | |
| 01 SITE NAME (Legal, common, or descriptive name of site) Marathon Oil Co. - Robinson Refinery | | 02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER Marathon Ave. | |
| 03 CITY Robinson | 04 STATE IL | 05 ZIP CODE 62454 | 06 COUNTY Crawford |
| 07 COORDINATES LATITUDE 39° 0' 00.0" | | 08 LONGITUDE 087° 43' 32.5" | |
| 09 DIRECTIONS TO SITE (Starting from nearest public road) Take State Route 33 (east-west route) to Robinson, IL. In Robinson, turn south onto Cross St. and go 5 block and turn east. This road will lead a person to the refinery. | | | |
| III. RESPONSIBLE PARTIES | | | |
| 01 OWNER (If known) Marathon Oil Co. | | 02 STREET (Business, mailing, residential) 539 South Main Street | |
| 03 CITY Findlay | 04 STATE OH | 05 ZIP CODE 45840 | 06 TELEPHONE NUMBER (419) 422-2121 |
| 07 OPERATOR (If known and different from owner) Marathon Oil Co. | | 08 STREET (Business, mailing, residential) Marathon Ave. | |
| 09 CITY Robinson | 10 STATE IL | 11 ZIP CODE 62454 | 12 TELEPHONE NUMBER (618) 544-2121 |
| 13 TYPE OF OWNERSHIP (Check one) <input checked="" type="checkbox"/> A. PRIVATE <input type="checkbox"/> B. FEDERAL: _____ (Agency name) <input type="checkbox"/> C. STATE <input type="checkbox"/> D. COUNTY <input type="checkbox"/> E. MUNICIPAL <input type="checkbox"/> F. OTHER: _____ (Specify) <input type="checkbox"/> G. UNKNOWN | | | |
| 14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply) <input checked="" type="checkbox"/> A. RCRA 3001 DATE RECEIVED: 8/18/80 MONTH DAY YEAR <input checked="" type="checkbox"/> B. UNCONTROLLED WASTE SITE (CERCLA 103c) DATE RECEIVED: 6/9/81 MONTH DAY YEAR <input type="checkbox"/> C. NONE | | | |
| IV. CHARACTERIZATION OF POTENTIAL HAZARD | | | |
| 01 ON SITE INSPECTION <input type="checkbox"/> YES DATE _____ MONTH DAY YEAR <input checked="" type="checkbox"/> NO | | BY (Check all that apply) <input type="checkbox"/> A. EPA <input type="checkbox"/> B. EPA CONTRACTOR <input type="checkbox"/> C. STATE <input type="checkbox"/> D. OTHER CONTRACTOR <input type="checkbox"/> E. LOCAL HEALTH OFFICIAL <input type="checkbox"/> F. OTHER: _____ (Specify) CONTRACTOR NAME(S): _____ | |
| 02 SITE STATUS (Check one) <input checked="" type="checkbox"/> A. ACTIVE <input type="checkbox"/> B. INACTIVE <input type="checkbox"/> C. UNKNOWN | | 03 YEARS OF OPERATION 1969 1979 BEGINNING YEAR ENDING YEAR <input type="checkbox"/> UNKNOWN | |
| 04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED Dissolved air flotation float (toxic / persistent) Slop oil emulsion solids (toxic) Heat exchanger bundle cleaning sludge (toxic) API separator sludge (toxic) May contain heavy metals, phenols, and benzene. | | | |
| 05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION Environmental / Groundwater, surface water, and soil contamination Population / Drinking water | | | |
| V. PRIORITY ASSESSMENT | | | |
| 01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents) <input type="checkbox"/> A. HIGH (Inspection required promptly) <input type="checkbox"/> B. MEDIUM (Inspection required) <input type="checkbox"/> C. LOW (Inspect on time available basis) <input type="checkbox"/> D. NONE (No further action needed, complete current disposition form) | | | |
| VI. INFORMATION AVAILABLE FROM | | | |
| 01 CONTACT Mr. Tom Powell | | 02 OF (Agency/Organization) Collinsville Illinois Environmental Protection Agency | |
| 03 TELEPHONE NUMBER (618) 345-4600 | | 04 PERSON RESPONSIBLE FOR ASSESSMENT | |
| 05 AGENCY | | 06 ORGANIZATION | |
| 07 TELEPHONE NUMBER () | | 08 DATE ____/____/____ MONTH DAY YEAR | |



| | | |
|---|---|--|
| 01 PHYSICAL STATES (Check all that apply) | 02 WASTE QUANTITY AT SITE | 03 WASTE CHARACTERISTICS (Check all that apply) |
| (Measure of waste quantities must be independent) | | |
| <input checked="" type="checkbox"/> A. SOLID <input type="checkbox"/> B. POWDER, FINES <input checked="" type="checkbox"/> C. SLUDGE <input type="checkbox"/> D. OTHER _____ (Specify) | TONS <u>8040000/yr.</u> CUBIC YARDS _____ NO OF DRUMS _____ | <input checked="" type="checkbox"/> A. TOXIC <input type="checkbox"/> B. CORROSIVE <input type="checkbox"/> C. RADIOACTIVE <input checked="" type="checkbox"/> D. PERSISTENT <input type="checkbox"/> E. SOLUBLE <input type="checkbox"/> F. INFECTIOUS <input type="checkbox"/> G. FLAMMABLE <input type="checkbox"/> H. IGNITABLE <input type="checkbox"/> I. HIGHLY VOLATILE <input type="checkbox"/> J. EXPLOSIVE <input type="checkbox"/> K. REACTIVE <input type="checkbox"/> L. INCOMPATIBLE <input type="checkbox"/> M. NOT APPLICABLE |

| CATEGORY | SUBSTANCE NAME | 01 GROSS AMOUNT | 02 UNIT OF MEASURE | 03 COMMENTS |
|----------|-------------------------|-----------------|--------------------|--|
| SLU | SLUDGE | 515,000 | Tons/yr | K0509 K051 API separator sludge/Heat exchanger |
| OLW | OILY WASTE | 5,000,000 | Tons/yr | K049 Ship oil emulsion solids |
| SOL | SOLVENTS | | | |
| PSD | PESTICIDES | | | |
| OCC | OTHER ORGANIC CHEMICALS | 2525000 | Tons/yr | K048 DAF and unheated tank bottoms |
| IOC | INORGANIC CHEMICALS | | | |
| ACD | ACIDS | | | |
| BAS | BASES | | | |
| MES | HEAVY METALS | | | |

[illegible]

| CATEGORY | 01 FEEDSTOCK NAME | 02 CAS NUMBER | CATEGORY | 01 FEEDSTOCK NAME | 02 CAS NUMBER |
|----------|-------------------|---------------|----------|-------------------|---------------|
| FDS | | | FDS | | |
| FDS | | | FDS | | |
| FDS | | | FDS | | |
| FDS | | | FDS | | |

U.S. EPA Erris Files: Region II - Chicago, IL.
Illinois EPA files, Collinsville, Ill.



POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE 02 SITE NUMBER
IL IL D00576882

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A. GROUNDWATER CONTAMINATION

03 POPULATION POTENTIALLY AFFECTED: < 7000

02 ☐ OBSERVED (DATE: _____)

☒ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

This potential is due to several facts: 1.) past impoundments on-site, 2.) Storage tanks, 3.) pipelines, and 4.) general site operations. There is no indication if past impoundments were lined and if there is some way to check the integrity of any underground pipelines and tanks for leakage. There are no monitoring wells to check for problems.

01 ☒ B. SURFACE WATER CONTAMINATION

03 POPULATION POTENTIALLY AFFECTED: < 7000

02 ☐ OBSERVED (DATE: _____)

☒ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

This is due to the present landfarm which is "uphill" from a unlined surface impoundment which drains into a tributary of Sugar Creek. If application is just before a heavy thunderstorm, surface runoff could pick up contaminants and introduce it to the surface water impoundment and the creek.

01 ☐ C. CONTAMINATION OF AIR

03 POPULATION POTENTIALLY AFFECTED: _____

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

NONE

01 ☐ D. FIRE/EXPLOSIVE CONDITIONS

03 POPULATION POTENTIALLY AFFECTED: _____

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

NONE - Proper storage and handling of raw and processed materials has lowered the chance of this occurrence

01 ☐ E. DIRECT CONTACT

03 POPULATION POTENTIALLY AFFECTED: _____

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

NONE - Site is fenced and is guarded by patrolling guards 24 hrs/day - 7 days/wk.

01 ☒ F. CONTAMINATION OF SOIL

03 AREA POTENTIALLY AFFECTED: ~ 13
(Acres)

02 ☐ OBSERVED (DATE: _____)

☒ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

The concern is the concentration of heavy metals and persistent organics that may be present in the waste being landfarmed. Since the land is not being used for food crops, the concern is the effect of continual application of the waste on cover vegetation and to prevent water pollution via erosion and leaching. The rate of application (which is estimated) seems O.K. Total metals in soil should be checked.

01 ☒ G. DRINKING WATER CONTAMINATION

03 POPULATION POTENTIALLY AFFECTED: < 7000

02 ☐ OBSERVED (DATE: _____)

☒ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

This is due to the location of three domestic water wells within 3000 ft of one of the hazardous waste management areas and depending on the amount of water pumped could cause any plumes to move towards the cone of depression and contaminate the well.

01 ☐ H. WORKER EXPOSURE/INJURY

03 WORKERS POTENTIALLY AFFECTED: _____

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

NONE

01 ☐ I. POPULATION EXPOSURE/INJURY

03 POPULATION POTENTIALLY AFFECTED: _____

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

SEE DRINKING WATER SECTION



POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE 02 SITE NUMBER
IL IL D005476882

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. DAMAGE TO FLORA
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED

NONE - DUE TO WASTE TYPE AND LOCATION OF TREATMENT AREAS.

01 ☐ K. DAMAGE TO FAUNA
04 NARRATIVE DESCRIPTION (include name(s) of species)

02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED

NONE

01 ☐ L. CONTAMINATION OF FOOD CHAIN
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED

NONE

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES
(Spills/runoff/standing liquids/leaking drums)

02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: < 7000

04 NARRATIVE DESCRIPTION

This may be a route that is not being monitored efficiently. Any raw or processed materials that leak out of a pipe or tank and is hazardous comes under the RCRA regulations (Parts 262 - 265 or Parts 122 - 124 or requirements of Section 3010).

01 ☐ N. DAMAGE TO OFFSITE PROPERTY
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED

NONE

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED

UNKNOWN AT THIS TIME - NEED PLANT "MAPS."

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED

NONE

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

III. TOTAL POPULATION POTENTIALLY AFFECTED: < 7000

IV. COMMENTS

The concern with this site is the size of the plant and the raw and processed materials along with the waste products. The waste products most likely contain: phenols, benzene, heavy metals and other organics. There are no analyses on the waste being landfilled to determine the environmental effects and there seems to be no info. on the past surface impoundments.

V. SOURCES OF INFORMATION (Cite specific references, e. g., state files, sample analysis, reports)

Illinois Environmental Protection Agency files

EXECUTIVE SUMMARY

This site has been placed in the ERRIS data base as a result of its selection for Phase II evaluation during the federally funded Surface Impoundment Assessment (SIA) study of 1980. During ERRIS placement the operator name and business address were utilized from the SIA which results in deviations from ERRIS for actual site location, Part I section II items 02 through 08 of form 2070-12. This use of operator name and address has also led to one (1) ERRIS listing representing, in actuality, from one (1) to one hundred eight (108) actual brine pits at an equal number of separate locations.

Some considerable effort has been expended to select the site with highest, Phase II SIA, pollution potential where multiple sites are represented by a single ERRIS listing. One must keep in mind that the Phase II SIA represents no more than 7 percent of the brine pits identified in Illinois. Phase I identified more than 3200 pits where Phase II evaluated a random selection of less than 220. One must also maintain a realization that phase II pollution potential was determined by bench top study with little or no actual site visitation or monitoring.

Minimal to no file information exists on this site beyond that contained in Phases I and II of the SIA. There is no direct evidence of hazardous waste disposal at this site beyond the potentially hazardous constituents of Illinois Basin brines, but with only annual inspections by Illinois Mines and Minerals staff relevant to oil production practices and recent backfilling of most brine pits in Illinois, disposal of off site material of unknown nature is possible. A literature review and laboratory analysis of samples from two other sites indicate concern for contamination of groundwater/surface water by Sodium, Sulfate, Chloride etc. (Non-Hazardous Constituents), concern for heavy metals (i.e., Chrome, Vanadium, Barium) and long chain hydrocarbons.

A question arises as to the addressability of the heavy metals by CERCLA when one considers 40 CFR section 300.6 "Definitions - Federally Permitted Release (i)" and Section 101(10) of CERCLA. The statement "and which are reinjected" seems to allow CERCLA action, but interpretation and clarification by USEPA legal staff seems required. The long chain hydrocarbons would appear to be included in the exclusion given to crude oil and fractions thereof under 40 CFR section 300.6 "Definitions-Hazardous Substance" and 101(14) of CERCLA.

A medium priority has been assigned due to the potential impact of this site on groundwater in a rural area where private wells are generally the sole source for potable water. Similar sites have impacted private wells to a point requiring users to seek alternative sources for drinking water. A site inspection should be scheduled to verify/update owner-operator information and gain more thorough site specific information.

RML:bf/22

